

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/014520

| A. CLASSIFICATION OF SUBJECT MATTER IPC 7 B01J8/02 F28D9/00 | | |
|---|---|--|
| According to International Patent Classification (IPC) or to both national classification and IPC | | |
| B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 B01J F28D | | |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched | | |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| X | US 5 869 011 A (LEE JING MING) 9 February 1999 (1999-02-09) column 6, line 49 - column 7, line 38; figures | 1-4, 6, 9, 10 |
| A | EP 1 221 339 A (METHANOL CASALE SA) 10 July 2002 (2002-07-10) the whole document | 1-10 |
| A | DE 855 258 C (ICI LTD) 10 November 1952 (1952-11-10) page 2, line 92 - line 117; figures | 1 |
| A | WO 94/12274 A (SHELL CANADA LTD ; SHELL INT RESEARCH (NL)) 9 June 1994 (1994-06-09) | |
| A | DE 39 16 337 A (SCHMITT UWE) 4 October 1990 (1990-10-04) | |
| <input type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex. | | |
| * Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family | | |
| Date of the actual completion of the international search | | Date of mailing of the international search report |
| 6 April 2005 | | 13/04/2005 |
| Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | | Authorized officer Vlassis, M |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/014520

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| US 5869011 | A | 09-02-1999 | US 5520891 A | 28-05-1996 |
| EP 1221339 | A | 10-07-2002 | EP 1221339 A1 | 10-07-2002 |
| | | | AT 290427 T | 15-03-2005 |
| | | | BR 0116729 A | 23-12-2003 |
| | | | CA 2433775 A1 | 11-07-2002 |
| | | | EG 23139 A | 28-04-2004 |
| | | | WO 02053276 A1 | 11-07-2002 |
| | | | EP 1347825 A1 | 01-10-2003 |
| | | | US 2002088613 A1 | 11-07-2002 |
| DE 855258 | C | 10-11-1952 | NONE | |
| WO 9412274 | A | 09-06-1994 | AU 5563394 A | 22-06-1994 |
| | | | WO 9412274 A1 | 09-06-1994 |
| | | | ZA 9308618 A | 04-08-1994 |
| DE 3916337 | A | 04-10-1990 | DE 8903281 U1 | 27-04-1989 |
| | | | DE 3916337 A1 | 04-10-1990 |